

**PROFORMA FOR SUBMISSION OF PROGRESS
REPORTS BY COLLEGES SUPPORTED
UNDER STAR COLLEGE SCHEME 2015-2016**

1. Name of the College : PSGR Krishnammal College for Women
2. Name of Departments supported : Physics, Chemistry, Botany, Zoology & Mathematics
- Name of Coordinator, Designation, Address, phone & Fax nos., email : **Dr. S.N. Padma Devi,**
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3. List of courses (B.Sc./M.Sc./PG Diploma, Certificate, etc) run by different participating departments

Department	Courses Offered					
	UG	PG	M.Phil	Ph.D	Certificate /Diploma/ Advanced Diploma Course	Job oriented course
Physics	B.Sc. Physics	M.Sc. Physics	Physics	Physics	Embedded System Design	PCB Fabrication Techniques.
Chemistry	B.Sc. Chemistry	M.Sc. Chemistry	Chemistry	Chemistry	-	“Instrumental methods of Analysis” in collaboration with Si’Tarc, Coimbatore
Botany	B.Sc. Botany	M.Sc. Botany	Botany	Botany	Commercial Horticulture	Commercial Tissue Culture
Zoology	B.Sc. Zoology	-	Zoology	Zoology	Pathology and Clinical Laboratory Science	Vermiculture & Mushroom Culture
Mathematics	B.Sc. Mathematics	M.Sc. Mathematics	Mathematics	Mathematics	-	A Tool for Research – SPSS

4. Admission in different courses in participating departments in 2011-12 , 12-13, 13-14, 14-15 & 15-16 academic sessions:

S.No.	Year	Cut off % for admission	No. of students admitted	% of result	Position in university	No. of drop out students
Physics						
1	2011-12	70	60	99.4	Autonomous	02
2	2012-13	70	60	100	&	06
3	2013-14	75	60	100	Affiliated to	04
4	2014-15	85	63	100	Bharathiar	00
5	2015-16	90	63	100	University	00
Chemistry						
1	2011-12	70	60	87	Autonomous	07
2	2012-13	70	60	90	&	02
3	2013-14	80	60	88	Affiliated to	01
4	2014-15	85	63	90	Bharathiar	04
5	2015-16	85	63	90	University	04
Botany						
1	2011-12	60	60	90	Autonomous	15
2	2012-13	60	60	92	&	04
3	2013-14	59	60	99.6	Affiliated to	02
4	2014-15	70	63	100	Bharathiar	01
5	2015-16	70	54	90	University	03
Zoology						
1	2011-12	60	60	81	Autonomous	10
2	2012-13	60	60	76	&	05
3	2013-14	60	60	100	Affiliated to	05
4	2014-15	70	63	100	Bharathiar	05
5	2015-16	70	55	90	University	04
Mathematics						
1	2011-12	60	60	95	Autonomous	03
2	2012-13	60	60	94	&	07
3	2013-14	60	60	95	Affiliated to	00
4	2014-15	99	63	100	Bharathiar	02
5	2015-16	98.3	63	100	University	00

DEPARTMENT OF PHYSICS

5. Activities carried out during the year (Department wise):

A) Student Activities:

i. Summer School:

- 10 students attended the training programme at SiTARC, Coimbatore
- 7 students attended the training programme at Radio Astronomy Centre, Ooty
- 1 student attended the training programme at Gas Turbine Research Establishment, DRDO, Bangalore

ii. Industrial Visit:

S.No	Class	Place of visit	Date	No. of Beneficiaries	Justification
1	III B.Sc Physics	BITS PILANI, Goa Campus	1.1.16-6.1.16	43	To motivate the students to take up the research career

iii. List of projects taken by students (purchase of chemicals, field visit, hiring charges etc)

- Study of Applications of Newton's Rings
- Growth of Potassium Dichromate doped Potassium Dihydrogen Phosphate Single Crystals by Slow Evaporation methods (**Interdepartmental with Chemistry**)
- Automatic Power saving ON/OFF Device
- UV Spectral analysis of chemical constituents in commercial Soft drinks (**Interdepartmental with Chemistry**)
- Study of Green batteries- construction and their functions (**Interdepartmental with Botany**)
- Crystal growth based on the Surface Morphology (**Interdepartmental with Chemistry**)
- Simulation using Arduino board
- Study of Electrolytic capacitor using a homemade bottle capacitor (**Interdepartmental with Chemistry**)
- A Study on Newton's Law of cooling using various oils
- Determination of thickness of various thin materials by using Air wedge Interferometer
- Theoretical study on the alpha accompanied Ternary Fission in Cm Isotopes.

B. Teachers Activity:

i. Seminars attended

- **Dr. J. Balavijayalakshmi, Dr. S. Shanmuga sundari, Mrs. T. Poongodi** attended the “**International Workshop on Theoretical and Experimental Physics**”, held at Department of Physics, **PSG College of Technology, Coimbatore** on 30.12.15.
- **A.P. Birundha** attended the “**Workshop on corrosion Engineering and Technology**”, held at **Bannari Amman Institute of Technology**, during 12.2.16 – 13.2.16.
- **Mrs. N. Priyadharsini** attended the “**Workshop on Nanomaterials for Energy Applications**”, held at **Anna University, Coimbatore**, during 18.2.16 – 19.2.16.

ii. Training course attended

- **Dr. P. Meena and Mrs. C. Sharmila** attended the “**Winter Internship program on Nanotechnology**” at **Ramakrishna Engineering College, Coimbatore** during 16.12.15 to 18.12.15.

iii. Guest Lectures (Please mention Name, Designation, host institute of guest faculty invited)

1. **Prof. M.N. Ponnuswamy**, Emeritus Professor, Department of Crystallography and Bio Physics, University of Madras, delivered a lecture on “**Basic concept of Crystallography and Biophysics**” on 06.07.15.
2. **Dr. E.S. Kannan**, Assistant Professor, Department of Physics, BITS PILANI, Goa Campus, delivered a lecture on “**Nanotechnology- Lessons from Nature**” on 3.9.15- **Interdepartmental with Chemistry, Botany and Zoology.**
3. **Dr. A.K. Asraff**, Director, Structural Dynamics and analysis group, Liquid Propulsion Systems Centre, ISRO, Trivandrum, delivered a lecture on “**India’s Contribution to Space**” on 9.9.15.

4. **M. Sathiesh Kumar**, Assistant Professor, Sri Ramakrishna Engineering College, Coimbatore, delivered a lecture on “**Basics of Nanotechnology**” on 5.2.16 - **Interdepartmental with Chemistry, Botany and Zoology.**
5. **Dr. M. Sathish**, Scientist, Functional Materials Division, CSIR-CECRI, Karaikudi, delivered a lecture on “**Nanomaterials for Electrochemical Energy**” on 9.2.16 - **Interdepartmental with Chemistry.**
6. **Prof L. Senthil Kumar**, Assistant Professor, Department of Physics, Bharathiar University, Coimbatore, delivered a lecture on “**Band Theory of Solids**” on 11.2.16 -**Interdepartmental with Chemistry.**
7. **G. Arun**, Senior Medical Physicist & Radiation safety officer, Yesodha Cancer Institute, Hyderabad delivered a lecture on “**Radiotherapy Physics - Clinical and Radiation Safety**” on 19.02.16 - **Interdepartmental with Zoology**
8. **Dr. K.B. Rajesh**, Assistant Professor, Department of Physics, Chikkanna Govt. Arts College, Tiruppur, delivered a lecture on “**Introduction to Nano Optics**” on 24.2.16

6. Advisory committee meeting: - ANNEXURE I

7. **List of New Practicals / demonstrations introduced for UG students of each batch (I, II and III year) in different departments supported under Star College Scheme in the last one year:**

III Year Practicals:

1. Op Amp Astable Multivibrator
2. Study of characteristics of photodiode (solar cell)
3. Determination of efficiency of solar cells

Demonstrations:

1. Determination of resistivity for different materials by four probe method
2. Determination of Curie temperature of ferrites.

8. **Number of students taking project Vs. total number of students. Please give list of projects department-wise during the support period**

Number of students involved in projects in the year 2015-16 - 56 Vs 56 students

List of projects for the year 2015-16

- Study of Applications of Newton's Rings
- Growth of Potassium Dichromate doped Potassium Dihydrogen Phosphate Single Crystals by Slow Evaporation methods (**Interdepartmental with Chemistry**)
- Automatic Power saving ON/OFF Device
- UV Spectral analysis of chemical constituents in commercial Soft drinks (**Interdepartmental with Chemistry**)
- Study of Green batteries - construction and their functions (**Interdepartmental with Botany**)
- Crystal growth based on the Surface Morphology (**Interdepartmental with Chemistry**)
- Simulation using Arduino board
- Study of Electrolytic capacitor using a homemade bottle capacitor (**Interdepartmental with Chemistry**)
- A Study on Newton's Law of cooling using various oils
- Determination of thickness of various thin materials by using Air wedge Interferometer
- Theoretical study on the alpha accompanied Ternary Fission in Cm Isotopes.

9. Interdepartmental activities conducted:

- Faculty and students of B.Sc., Chemistry, Botany and Zoology attended the Lecture on "**Nanotechnology- Lessons from Nature**" organized by the Department of Physics on 03.9.15. **Dr. E.S. Kannan, Assistant Professor, Department of Physics, BITS PILANI, Goa** delivered the lecture.
- Faculty and students of B.Sc., Chemistry, Botany and Zoology attended the Lecture on "**Basics of Nanotechnology**" on 5.2.16 organized by the Department of Physics on 5.2.16. **M. Sathiesh Kumar, Assistant Professor, Sri Ramakrishna Engineering College, Coimbatore,** delivered the lecture.
- Faculty and students of B.Sc., Chemistry, Botany and Zoology attended the Lecture on "**Nanomaterials for Electrochemical Energy,**" on 9.2.16" organized by the Department of Physics on 5.2.16. **Dr M. Sathish, Scientist, Functional Materials Division, CSIR-CECRI, Karaikudi,** delivered the lecture.
- Faculty and students of B.Sc., Chemistry attended the Lecture on "**Band Theory of Solids**" organized by the Department of Physics on 11.2.16. **Prof L. Senthil Kumar, Assistant Professor, Department of Physics, Bharathiar University, Coimbatore,** delivered the lecture.

10. Qualitative improvements due to DBT support (please highlight 5 salient lines)

- i. The industrial visit to BITS PILANI, Goa Campus, kindled the students interest in research. The visit to the various labs in the department enabled the students to gain practical knowledge.
- ii. The project work on various topics motivated the students to take up research.
- iii. The guest lectures on various topics have enriched the knowledge of the faculty and students.
- iv. The participation of faculty in the workshop and the International Symposia enabled them to interact with experts in the respective fields.

11. Strengths and weaknesses of each department (3 each)

Strength

1. Well equipped laboratory
2. Qualified and experienced faculty
3. Team spirit among the faculty

Weakness: - Nil

12. Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines) : - Nil-

13. DBT grants utilization:

A) Non- recurring (Equipment) - Details submitted in the year 2015-16 report

B) Recurring Details – Amount Sanctioned: 2, 00,000 /-

S. No	Details	Amount in Rs
1	Visiting Faculty	9,000 /-
2	Group Project	15,281 /-
3	Industrial Training	35,000 /-
4	Internship Training	10,000 /-
5	Workshop	4,750 /-
6	Chemicals/Consumables/Contingency	1,19,995 /-
Total		2,00,896 /-

Students Feedback:

The financial assistance provided by DBT under the STAR College scheme has enriched the quality of the teaching learning process. The purchase of additional equipments helped the students to carry out the experiments individually.

The hands on training provided on Microcontrollers helped the students to learn the basics of programming using microcontrollers. The expertise gained would help them to get placed in IT related industries.

Hands on training of Nano technology helped the students and faculty to gain practical knowledge in this field of current interest.

The training attended by the students at SiTARC, helped them to gain knowledge on instrument calibration and materials testing.

Faculty feedback:

The workshops and training programme attended by faculty under star college schemes has enriched the subject knowledge of the faculty. The faculty had an opportunity to interact with the experts in different fields of Physics. This enabled their teaching to be more effective thus motivating the students to take up research.

Future Plans:

- To make the department the most sought after for research.
- To ensure placement and opportunities abroad for the students.

DEPARTMENT OF CHEMISTRY

5. Activities carried out during the year (department wise): 2014-15

A) Students Activities

i. Summer school:

- Training course on “**Chemical Analysis for wet and Instrumental methods**” in collaboration with Scientific and Industrial Testing and Research Centre (Si'Tarc), Coimbatore. 20 students of II B.Sc., Chemistry during August, September and October months (20 hrs). During the course the students learned about the Assay of Metals and training to handle various sophisticated instruments like IR, AAS, Particle Analyser etc. Gained knowledge in the detection and estimation of various elements like Nickel, Copper etc present in the Alloys using the instruments. This will increase the placement opportunity in R&D and Analytical Labs and will enable the students to pursue higher studies
- Training programme on “**Instrumental Techniques for Medical Textiles**” in collaboration with South Indian Textile Research Association (SITRA), Coimbatore. The students gained knowledge in **handling various instruments** like **HPLC, ICPMS, HPTLS, GCMS etc.** and **application** of these in the field of **Medical Textiles**

ii. Industrial Visit

S. No	Class	Place of Visit	Date	No. of Beneficiaries	Justification
1	III B.Sc., Chemistry	ISRO, Sriharikota.	22.07.2015 to 24.07.2015	49	The opportunity to visit ISRO, Sriharikota, Birla Planetorium, Chennai IGCAR, Kalpakkam
2	III B.Sc., Chemistry	Birla Planetorium, Chennai	22.07.2015 to 24.07.2015	49	
3	III B.Sc., Chemistry	IGCAR, Kalpakkam	22.07.2015 to 24.07.2015	49	

iii. List of Projects taken by III B.Sc., Chemistry students

(14 Groups with each 4-5 students)

- Tetradentate Schiff base complexes of Transition Metals: Synthesis, Characterization and Microbial activity--**Interdisciplinary**
- Sweet Nanochemistry: A Fast, Reliable Alternative Synthesis of Metal Nanoparticles using Benign Reagents--**Interdisciplinary**
- Microwave Formation of Conducting Polymer /Ag Nanocomposite based on Interfacial Polymerization
- Complexes of 3-Hydroxy-2-naphthoates of Transition Metal - Precursors for Nano Metal Oxides
- A study on the bioaccumulation and screening of toxic metal ions in effluents, fodder, milk samples collected from Erode, Tirupur, Coimbatore districts-**Interdisciplinary**
- Green Synthesis of Copper Complexes
- Corrosion inhibitive performance of schiffs bases of ortho aminothiophenol on mild steel in 1M H₂SO₄
- Treatment of synthetic wastewater by the utilization of biowastes: Batch Biosorption studies-**Interdisciplinary**
- Synthesis and Evaluation of 1,8-Naphthyridine compound as Corrosion Inhibitors for mild steel in acidic medium
- Synthesis of Copper(II) and Nickel(II) Complexes
- Synthesis and Antimicrobial Evaluation of some Novel Pyrazoles--**Interdisciplinary**
- Synthesis and Biological Evaluation of Novel Benzimidazole Derivative with Aspirin as Potent Antibacterial agent-**Interdisciplinary**
- Preparation of Nano Metal Oxides from Hydrazine Complexes

B. Teacher's Activities

i. Seminars attended:

1. **Dr. D. Nalini** attended and presented a paper entitled "**Microwave assisted synthesis of 2-(4-nitrophenyl)-vinyl-1H-imidazoline and its application as corrosion inhibitor for mild steel in sulphuric acid medium with quantum chemical evidences**" in the UGC sponsored two days National level Conference on "**Recent Trends in Medicinal Chemistry**"

organized by **Department of Chemistry, Government Arts College, Coimbatore** from 19th – 20th Feb 2015.

2. **Dr. D. Nalini** attended and presented a paper entitled **“Synthesis, characterization and anti-corrosion studies on new nano sized imidazoline derivative”** in the UGC sponsored two days National level Conference on **“Recent Trends in Medicinal Chemistry”** organized by **Department of Chemistry, Government Arts College, Coimbatore** from 19th – 20th Feb 2015.
3. **Dr. D. Nalini** attended and presented a paper entitled **“Vindication of Mild Steel Corrosion Protection during acid Pickling by New Heterocyclic Derivative”** in the International corrosion symposium for research scholars (CORSYM-2015)” organized by **NACE International NIGIS South Zone Student Section at IIT-Madras, Chennai** from 31stJuly – 2ndAug 2015.
4. **Dr. D. Nalini** attended and presented a paper entitled **“Electrochemical Investigation and Modelling of Corrosion Inhibition of Mild Steel in Molar Hydrochloric Acid using Aceclofenac: Anti-Inflammatory drug”** in the International corrosion symposium for research scholars (CORSYM-2015)” organized by **NACE International NIGIS South Zone Student Section at IIT-Madras, Chennai** from 31stJuly – 2ndAug 2015.
5. **Dr. D. Nalini** attended and presented a paper entitled **“Reliable Corrosion Inhibition of Mild Steel during Acid Descaling using Organic Nitrogenous Compound: A Combined Electrochemical and Computational Assessment”** in the **International Conference CORCON 2015** organized by **NACE International Gateway India Section at Chennai Trade Centre, Chennai** from 19th – 21st Nov 2015.
6. **Dr. D. Nalini** attended and presented a paper entitled **“Theoretical and electrochemical studies of anticonvulsants drug as corrosion inhibitor for mild steel in acid media”** in the **International Conference CORCON 2015** organized by **NACE International Gateway India Section at Chennai Trade Centre, Chennai** from 19th – 21st Nov 2015.
7. **Dr. D. Nalini** attended and presented a paper entitled **“Electrochemical and corrosion behaviour of Zircaloy-4 and commercial pure titanium in fluorinated nitric acid medium”** in the **International Conference CORCON 2015** organized by **NACE International Gateway India Section at Chennai Trade Centre, Chennai** from 19th – 21st Nov 2015.

8. **Dr. D. Nalini** attended and presented a paper entitled **“Adsorption behavior and corrosion inhibitive potential of imidazoline derivatives on mild steel/acid interface: Experimental and theoretical studies”** 17th Asian Pacific Corrosion Control Conference (17th APCCC) organised by the **NACE International, Electrochemical Society of India, IIM at IIT-Bombay, Mumbai** from 27th – 30th Jan 2016.
9. **Dr. D. Nalini** attended and presented a paper entitled **“Pharmaceutically active compounds as corrosion inhibitor for mild steel in acidic medium: electrochemical and theoretical studies”** 17th Asian Pacific Corrosion Control Conference (17th APCCC) organised by the **NACE International, Electrochemical Society of India, IIM at IIT- Bombay, Mumbai** from 27th – 30th Jan 2016.
10. **Mrs. P. Kanchana** attended and presented a paper entitled **“Synthesis and characterization of nanometal oxides from complex precursors”** in one day National level Conference on **“The widening horizons of Chemistry-III (TWHC-III-2015)”** organized by the **Department of Chemistry, Arulmigu Palaniandavar Arts College for Women, Palani** on 5th March 2015.
11. **Dr. N. Muthulakshmi Andal** attended and presented a paper entitled **“Effective employability of agro based material in the removal of Cu(II) ions”** in National Conference on **“Recent advances in Chemical sciences (RACS-2015)”** organized by **Department of Chemistry, Gandhigram Rural Institute-Deemed university, Dindigul** held on 5th & 6th March 2015.
12. **Dr. N. Muthulakshmi Andal** attended and presented a paper entitled **“Sorption studies of Ni(II) ions from aqueous and industrial streams using novel agricultural biosorbent”** in the National Conference on **“Recent advances in Chemical Sciences (RACS-2015)”** organized by **Department of Chemistry, Gandhigram Rural Institute-Deemed university, Dindigul** held on 5th & 6th March 2015.
13. **Dr. N. Muthulakshmi Andal** attended and presented a paper entitled **“Batch study experiments and column analysis for the removal of Pb(II) employing agro waste materials”** in International Conference on Water Conservation **“Save blue to save green”** organized by **Anna Adarsh College for Women, Chennai** on 26th August 2015.
14. **Dr. N. Muthulakshmi Andal** attended and presented a paper entitled **“Adsorption dynamics of ecofriendly litter wastes for Zn(II)/Cr(VI) from electroplating effluents-**

- continuous column method**” in the International Conference on **“Recent Trends in Analytical Chemistry”** organized by **University of Madras, Chennai** on 13th& 14th August 2015 and secured **“BEST PAPER AWARD”**.
15. **Mrs. V. Hemapriya** attended and presented a paper entitled **“Studies on corrosion inhibition of mild steel in 1M H₂SO₄ by novel heterocyclic compounds”** in the one day National level Conference on **“The widening horizons of Chemistry-III (TWHC-III-2015)”** organized by the **Department of Chemistry, Arulmigu Palaniandavar Arts College for Women, Palani** on 5th March 2015.
 16. **Mrs. V. Hemapriya** attended and presented a paper entitled **“Experimental and quantum chemical investigation of benzofused heterocyclic compounds as effective corrosion inhibitors for mild steel in 1M H₂SO₄”** in the International corrosion symposium for research scholars (CORSYM-2015)” organized by **NACE International NIGIS South Zone Student Section at IIT-Madras, Chennai** from 31stJuly – 2ndAug 2015 and secured **“BEST PAPER AWARD”**
 17. **Dr. N. Arunadevi** attended and presented a paper entitled **“Preparation of nanometal oxides from hydrazine complexes”** in the Indian National Conference on Development in Inorganic Applications (INDIA-2015) organized by the **Department of Chemistry, Periyar University, Salem** on **16.10.2015**.
 18. **Dr. N. Arunadevi**, attended and presented a paper entitled **“New transition metal complexes of naphthioc acid and hydroxyl naphthoic acid with hydrazine-preparation, spectroscopic and thermal science”** in one day National level Conference on **“The widening horizons of Chemistry-III (TWHC-III-2015)”** organized by the **Department of Chemistry, Arulmigu Palaniandavar Arts College for Women, Palani** on 5th March 2015.
 19. **Mrs. A. Kiruthika** attended and presented a paper entitled **“Removal of Lead(II) ions from aqueous solutions using polyester-MMT clay composite”** in the one day National level Seminar on **“Green Trends in Environmental Chemistry”** organized by **Sri GVG Vishalakshi College for Women, Udumalpet** and secured **“BEST PAPER AWARD”**.
 20. **Mrs. A. Kiruthika** attended and presented a paper entitled **“Synthesis, characterization and biological screening of poly(bis{benzylidene}ester)”** in UGC sponsored two days National level Conference on **“Recent Trends in Medicinal Chemistry”** organized by

Department of Chemistry, Government Arts College, Coimbatore from 19th – 20th Feb 2015.

21. **Mrs. A. Kiruthika** attended and presented a paper entitled **“Cardo polyesters for corrosion protection of mild steel in acid medium”** in the National Conference on **“Recent advances in Chemical Sciences (RACS-2015)”** organized by **Department of Chemistry, Gandhigram Rural Institute-Deemed university, Dindigul** held on 5th& 6th March 2015.
22. **Mrs. J. Saranya** attended and presented a paper entitled **“Corrosion inhibition properties of pyran and cyanopyran derivatives: Experimental and quantum chemical studies”** in the National Conference on **“Recent advances in Chemical Sciences (RACS-2015)”** organized by **Department of Chemistry, Gandhigram Rural Institute-Deemed University, Dindigul** held on 5th& 6th March 2015.
23. **Mrs. J. Saranya** attended and presented a paper entitled **“Inhibitive, adsorption and theoretical studies on quinoxaline and pyrazine derivative as corrosion inhibitors for mild steel in acid medium”** in the one day National Seminar on **“The Widening Horizons of Chemistry”** organized by **Department of Chemistry, Arulmigu Palaniandavar Arts College for Women, Palani** on 5th March 2015.
24. **Mrs. J. Saranya** attended and presented a paper entitled **“Quantum chemical and electrochemical studies on the corrosion inhibition of mild steel in 1M H₂SO₄ using thiadiazole derivatives”** in the Corrosion Awareness Day (CAD 15) organized by National Corrosion Council of India in collaboration with **CSIR-Central Electrochemical Research Institute, Karaikudi and The Gandhigram Rural Institute-Deemed University, Gandhigram** on 17th April 2015.
25. **Mrs. J. Saranya** attended and presented a paper entitled **“Influence of quinoxaline and pyrazine derivative on the corrosion inhibition of mild steel in acid solution: Adsorption, electrochemical, surface and theoretical studies”** in the 10th **Mid-Year CRSI Symposium in Chemistry** organized by **National Institute of Technology, Tiruchirapalli** from 21st – 23rd August 2015.
26. **Mrs. J. Saranya** attended and presented a paper entitled **“Corrosion inhibition and adsorption behavior of Thiadiazole derivatives on mild steel in acid medium: Experimental and Theoretical studies”** in the International corrosion symposium for research scholars (CORSYM)” organized by **NACE International NIGIS South Zone**

Student Section at IIT-Madras, Chennai from 31stJuly – 2nd Aug 2015 and secured “BEST PAPER AWARD”.

27. **Mrs. J. Saranya** attended and presented a paper entitled “**The inhibitory action of pyran derivative for acid and rebar corrosion in stimulated pore solution**” in a Two day National Conference **On approach of Green Chemistry in Pharma: Chemical and Material Science Sectors – A Perspective** organized by **PSG College of Pharmacy** on 30th& 31st October 2015.

ii. **Seminars, Workshops organized:**

- International Conference on “**Latest Developments in the Applications of Laser Technology**” (7.12.15) (**Jointly organized by the Department of Chemistry and Department of Physics**)
- National Seminar on “**Nanotechnology – Energizing the Future**” (7.1.16 & 8.1.16) (**Intercollegiate**)
- **Two Day lecture workshop on “Recent Developments in Chemistry**” (11.3.16 & 12.3.16) (**Intercollegiate**) sponsored by Science Academies of India.

iii. **Training courses attended:**

- **Dr. D. Nalini** and **Mrs K. Kalaiselvi** attended Workshop on “**Cathodic protection and pipeline corrosion**” at **CECRI - Industry oriented training Programme** (02.11.16 to 06.1.16)

Activities for Non-teaching Staff:

Training attended by Non-teaching staff:

Laboratory staff attended hands on training in the operation of Muffle furnace, Microwave oven, Sonicator, Ultra centrifuge, FT-IR and UV Spectroscopy in the Department of Chemistry.

iv. Guest lecturers: (Please mention Name, Designation, Host Institute of the Guest Faculty)

- 1. Prof. S. Muthusubramaian, Head, Dept of Organic Chemistry, Chair person, School of Chemistry, Madurai Kamaraj University, Madurai, delivered a lecture on “Versatile Applications of Nuclear Magnetic Resonance Techniques” (29.06.15)**
- 2. Dr. Murali Rangarajan, Associate Professor, Centre of Excellence in Advanced Materials and Green technologies, Dept of Chemical Engineering and Materials Science, Amrita Vishwa Vidhya Peetham (University), Coimbatore, delivered a guest lecture on “Electrochemical Technologies in Microelectronic Packaging” (17.07.15)**
- 3. S. Kadirvelu, Scientist ‘E’, DRDO Coordinator and Joint Director DRDO-BU, Centre for Life Sciences, Bharathiar University Campus, Coimbatore, delivered a guest lecture on “Characterization Techniques for Advanced Materials” (10.08.15)**
- 4. Dr. V. Vijaikanth, Associate Professor, Dept of Chemistry, School of Science and Humanities, Karunya University, Coimbatore, delivered a guest lecture on “Bioorganometallic Chemistry: Recent Advances” (20.08.15) (Interdisciplinary)**
- 5. Dr. M. Saminathan, Managing Director, Muthuram Laboratories, Erode, delivered a guest lecture on “Liquid Crystals: An Interesting Mesophase” (07.09.15) (Interdisciplinary)**
- 6. Dr. S. Rajasekaran, Scientific officer, Center of Excellence for Medical Textiles, SITRA, delivered a guest lecture on “High Performance Polymers & Electrospinning” (21.12.15)**
- 7. Dr. Velusamy K Velu, President, SNKV Services, Inc, Arizona State University, Arizona, USA, delivered a guest lecture on “Comprehensive Chemical Informatics” (23.12.15)(Interdisciplinary)**

Lab manuals, SOPs prepared:

- Lab manuals for III B.Sc., Chemistry -SBS –Biochemistry -II
- SOPs for “Chemical Analysis for wet and Instrumental methods”
- E – Resources developed.

6. Advisory committee meeting: ANNEXURE I

7. List of New Practicals/demonstrations introduced for UG students of each batch (I, II and III year) in different departments supported under Star College Scheme in last one year:

Job oriented course on “Instrumental methods of analysis” demonstration was given to handle various instruments IR, UV, Sonicator, Muffle furnace.

8. Number of students taking project vs. total number of students. Please give list of projects department-wise during the support period.

59 Vs 59

- Tetradentate Schiff base complexes of Transition Metals: Synthesis, Characterization and Microbial activity--**Interdisciplinary**
- Sweet Nanochemistry: A Fast, Reliable Alternative Synthesis of Metal Nanoparticles using Benign Reagents--**Interdisciplinary**
- Microwave Formation of Conducting Polymer /Ag Nanocomposite based on Interfacial Polymerization
- Complexes of 3-Hydroxy-2-naphthoates of Transition Metal - Precursors for Nano Metal Oxides
- A study on the bioaccumulation and screening of toxic metal ions in effluents, fodder, milk samples collected from Erode, Tirupur, Coimbatore districts-**Interdisciplinary**
- Green Synthesis of Copper Complexes
- Corrosion inhibitive performance of schiffs bases of ortho aminothiophenol on mild steel in 1M H₂SO₄
- Treatment of synthetic wastewater by the utilization of biowastes: Batch Biosorption studies-**Interdisciplinary**
- Synthesis and Evaluation of 1,8-Naphthyridine compound as Corrosion Inhibitors for mild steel in acidic medium
- Synthesis of Copper(II) and Nickel(II) Complexes
- Synthesis and Antimicrobial Evaluation of some Novel Pyrazoles--**Interdisciplinary**
- Synthesis and Biological Evaluation of Novel Benzimidazole Derivative with Aspirin as Potent Antibacterial agent-**Interdisciplinary**

- Preparation of Nano Metal Oxides from Hydrazine Complexes

9. Interdepartmental activities conducted:

- Group projects were carried out in collaboration with departments of **Botany, Zoology and Physics.**

10. Qualitative improvements due to DBT support

- The visit to ISRO, Sriharikota enabled to know about the launching, vehicle assembly and static test operations, range operations, liquid storage and service facilities and solid propellant space booster plant. The visit to IGCAR, Kalpakkam helped the students to know about the nuclear reactions, atomic energy, power plants, corrosion and its prevention etc.
- Interaction with eminent personalities through guest lecturers helped the students to update their subject knowledge.
- The training on analysis of “Medical Textiles” in collaboration with SITRA-Centre of Excellence for Medical Textiles, SITRA, Coimbatore helped the students handling various instruments like HPLC, ICPMS, HPTLS or HPTLC, GCMS etc and the use of these instruments in the field of Medical Textiles
- “Chemical Analysis for wet and Instrumental methods” in collaboration with Scientific and Industrial Testing and Research Centre (Si’Tarc), Coimbatore – 6. The students gained knowledge in the detection and estimation of various elements like Nickel, Copper etc present in the Alloys using the instruments. This will increase the placement opportunity in R&D and Analytical Labs.
- Group projects motivated the students to take up research.
- Some of our students have got admission to PG courses in Anna University, Bharathiar University.
- Shanjitha of II B.Sc., students is selected for Summer Project by Indian Academy of Sciences.
- Our students are selected for Summer project at Hyderabad University, IGCAR, Kalpakkam.

11. Strengths and weaknesses

Strength –

1. Students strength
2. Qualified faculty
3. Well equipped lab for practicals and projects

Weakness - NIL

12. Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines) : NIL

13. DBT grant utilization:

A) Non- recurring (Equipment) - Details submitted in the year 2015-16 report

B) Recurring Details – Amount Sanctioned: 2, 00,000 /-

Total expenses under different heads

S. No	Details	Amount in Rupees
1	Students Activities	
	i) Training Programme	30,000
	ii) Industrial Visit	38,000
	iii) Group Project	8,542.00
2	Teachers Activities	
	ii) Guest Lecture	2,500.00
3	Chemicals & Consumables	1,20,392.00
	Total	1,99,434.00

Students Feedback

The financial assistance given by DBT under STAR College scheme has enhanced the quality of teaching, learning process. With the introduction of new practical's and increase in the number of instruments (Potentiometer, Conductivity meter etc.) and chemicals has helped us to carry out the experiments individually with skill, which were carried out before support as group experiments.

The hands-on training on at Sitarc and Sitra enabled to students to operate various sophisticated instruments like HPLC, HPLC, ICPMS, HPTLS or HPTLC, GCMS etc. JOC

enabled the students to get firsthand knowledge to operate instruments like IR, Muffle furnace etc

Interdisciplinary approach in group project helped us to utilize the facilities available and faculty expertise in other departments and to pursue research in future. Overall the financial support has enabled to get a thorough knowledge in various aspects of chemistry and related fields which would help us to get placed in reputed industries and also for higher studies.

Faculty feedback

The workshops and training programme attended by faculty under star college schemes has enriched the subject knowledge of the faculty. The faculty had an opportunity to interact with the experts in different fields of chemistry through guest lecturers/visiting faculty and this has enabled them to disseminate the knowledge gained to students in a very effective manner and also motivated the students to take up higher studies.

Future Plans

- To provide more placement opportunities in Chemical and analytical and R&D institutes.

DEPARTMENT OF BOTANY

A) Student activities

i. Summer school:

II Year B.Sc., PBPBT students attended various industries/research institutions for their summer school.

S.No	Industries/research institutions	No .of Beneficiaries
1	Sugarcane Breeding Institute Coimbatore	4
2	Tigerhill Tea Factory, Tamil Nadu Tea Plantation Corporation Ltd. (TANTEA), Coonoor	5
3	Centre for Bioscience and Nanoscience Research Coimbatore	5
4	Aavin Milk and Milk Products, Pachapalayam, Coimbatore	6
5	Ramaswamy Chinnammal Trust, Vadavalli, Coimbatore	12
6	Aroma Milk and Milk Products, Coimbatore	7
7	Tamilnadu Newsprint & Papers Ltd., Karur	01
8	Sivasakthi Pharmaceuticals, Coimbatore	5
9	Ganapathy Tea Factory, Coonoor	6
10	Biofarm, Coimbatore	6

ii. Industrial Visits :

S.No	Class	Place of Visit	Date	No. of Beneficiaries	Justification
1	III B.Sc. PBPBT	JNTBGRI, Kerala	12.8.15 To 14.8.15	57	To motivate the students to take up higher studies and to expose them to the various avenues of research opportunities available.
2	III B.Sc. PBPBT	BSI, Coimbatore	15.9.15	57	
3	II B.Sc. PBPBT	IFGTB, Coimbatore	14.12.15	57	
4	II B.Sc. PBPBT	AVP, Kerala	19.12.15	57	
5	II B.Sc. PBPBT	TNAU, Coimbatore	13.1.16	57	
6	I B.Sc. Botany	Thanyas Organic Pvt. Ltd., Coimbatore	30.1.16	51	
7	II B.Sc. PBPBT	Surabhi Nursery, Coimbatore	5.2.16	57	

iii. List of projects undertaken by the students 57 vs 57

- Influence of nickel on the growth and biochemical contents of *Trigonella foenum-graecum* and *Arachis hypogaea*. (**Interdepartmental with Chemistry**)
- Evaluation of plants symbolised in Tamil poem kurinji pattu.
- Nutritional analysis of millets and cereals used in our daily life. (**Interdepartmental with Chemistry**)
- Determination of aspartame in soft drinks and its effects in plant growth. (**Interdepartmental with Chemistry**)
- Isolation and identification of *Rhizobium* bacteria by using 16S rDNA primer.
- Detection of adulterants in food products.
- Estimation of protein and carbohydrate in different pulses.
- Microbial production of plant growth hormones (IAA & GA) and its effect on plants growth, Nutritional factors and DNA in green gram and fenugreek.
- Antimicrobial activity of *in vitro* regenerated plantlets of *Acmella calva* (DC.) R.K. Jansen (Asteraceae).
- Phytochemical screening and anti oxidant properties of some ayurvedic plants. (**Interdepartmental with Chemistry**)
- Root morphology, anatomy and mycotrophy of *Habenaria logicornu* L.

B) Teachers' activities

i. Seminars attended:

Name of Faculty	Event	National/ International	Topic
Dr. M. Kamalam	Animal welfare and ethics, 11 th and 12 th December 2015, Dept. of Biotechnology, Karunya University, Coimbatore.	National seminar	Preparation of herbal formulation to control fungal diseases of domestic animal under <i>in- vivo</i> conditions.
			<i>In- vitro</i> screening of selected plant extracts against fungal pathogens causing skin diseases on domestic animals.
Dr. R. S. Meerabai	Research trends in Plant Sciences and its societal impacts, Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016	National Seminar	Evaluation of heavy metals in <i>Ampelocissus araneous</i> , (Planch).
			Phytochemical analysis & synthesis of silver nanoparticles of the medicinal plants- <i>Ruta graveolens</i> L.
			Synthesis & characterization of silver nanoparticles using the culture filtrates of the fungus <i>Rhizopus oryzae</i> & its application

Dr. S. Padma Devi	Research trends in Plant Sciences and its societal impacts, Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016	National Seminar	Zinc solublizing fungal isolates from the agricultural fields of Tirupur Dt, Tamilnadu,
			Coir briquettes- a boon to urban residents as a soilless organics medium for growing <i>Amaranthus viridis</i> .
			Influence of Nickel on growth and biochemical contents of <i>Trigonella foenum-graecum</i> L. & <i>Arachis hypogea</i> , L.
Dr. C. Krishnaveni	Research trends in Plant Sciences and its societal impacts, Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016	National Seminar	Extraction and characterization of fiber from <i>Hibiscus cannabinus</i> & <i>Solanum nigrum</i>
			Evaluation of plants symbolized in Tamil poem: Kurinji pattu
			Risks and benefits associated with genetically modified organisms (GMO)
Dr. M. Kamalam	Research trends in Plant Sciences and its societal impacts, Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016	National Seminar	Nutritional Analysis of Millets and cereals used in our daily life.
			Evaluation of some of the marketed tea samples for its phytochemical & antioxidant properties.
Dr. K.Gajalakshmi	Research trends in Plant Sciences and its societal impacts, Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016	National Seminar	Determination of aspartame in soft drinks and its effects in plant growth.
			Characterization of endophytic microbes from Indian medicinal plants
			Nanotechnology in Agriculture
Dr. M. Kanchana	Research trends in Plant Sciences and its societal impacts, Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016	National Seminar	Effects of various concentration of Auxin and cytokinin on callus induction from stem and leaf explants of <i>Hemigraphis colorata</i>
			Isolation & Identification of Rhizobium bacteria by using 16S rDNA primer.
Dr. K.S.Tamil selvi	Research trends in Plant Sciences and its societal impacts,	National Seminar	Detection of adulterants in food products
			Screening of organic acid producers

	Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016		from endophytic fungi of <i>Cucumis dipsaceus</i> Ehrenb. Ex Spach Morphological & phytochemical studies in <i>Nerium</i> species.
Dr. R.Sumathi	Research trends in Plant Sciences and its societal impacts, Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016	National Seminar	Estimation of protein and carbohydrate in different pulses
Dr. B. Chitra Devi	Research trends in Plant Sciences and its societal impacts, Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016	National Seminar	Microbial production of plant growth hormones (IAA & GA) and its effect on plant growth, nutritional factors and DNA study in green gram and fenugreek. Antimicrobial activity of <i>in vitro</i> regenerated plantlets of <i>Acmella calva</i> (dc.) R.K. Jansen (Asteraceae).
Dr. S. Sindhu	Research trends in Plant Sciences and its societal impacts, Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016	National Seminar	Phytochemical screening and anti oxidant properties of some ayurvedic plants.
Mrs. E. Uma	Research trends in Plant Sciences and its societal impacts, Sponsored by SERB, DST New Delhi, PSGRKC, Coimbatore. 5 th and 6 th January 2016	National Seminar	Root morphology, anatomy and mycotrophy of <i>Habenaria longicornu</i> L. (Orchidaceae)- endemic to western Ghats, southern India.
Dr. K.Gajalakshmi	9th National Symposium on Modern Biological Sciences, Dept, of Bioscience and Research,SNMV College for Arts and Science, Coimbatore and IICPT Thanjavur		Assessment of provincial Biodiversity through Melissopalynological studies of pollen collected by honey bee colonies from Bengaluru Dt.

	11th and 12th February 2016.		
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ii. Seminars/Workshops organized:

Programme	Title	Name of the funding agency	No. of participants
Taxonomy Workshop	Identification of Plants and Key preparation	Nil	68
National Seminar	Research Trends in Plant Sciences and its Societal Impact	Science and Engineering Research Board, DST (SERB), New Delhi	150
Workshop	Water quality Analysis	DBT Star College Scheme	62

iii. Workshops attended:

1. Taxonomy Workshop on Identification of Plants and Key preparation was attended by **10 faculty members** of the Department of Botany held on 16th July 2015. Dr. V.S. Ramachandran, a specialist in Biodiversity Conservation, Angiosperm, Taxonomy, Ethnobotany & Medicinal Plants, gave hands on training on plant identification techniques. The faculty members were also enlightened on the taxonomic key preparation techniques.
2. Research Awareness workshop on Oct 17th 2015 at Conference Hall, attended by **Dr. R. Sumathi, Dr. B. Chitra devi, Dr. S. Sindhu and Mrs. E. Uma.**
3. **Dr. K.S. Tamilselvi. 2015**, One day seminar on “Role of Teachers in quality sustenance & improvement” organized by PKR College of Arts and Science, Gobichetipalayam on 3rd November 2015.
4. **Dr. M. Kamalam. 2015**, Two days national seminar on animal welfare organized by Dept. of Biotechnology, Karunya University on 11 & 12th December 2015.
5. **Dr. K. Gajalakshmi. 2016**, Two day’s workshop on ”Water quality Analysis “ jointly organized by the Department of Botany and Environmental Science under DBT-STAR College Scheme on 28th and 29th January 2016.
6. **Dr. R. Sumathi. 2016**, Two day’s workshop on ”Water quality Analysis “ jointly organized by the Department of Botany and Environmental Science under DBT-STAR College Scheme at PSG CAS on 28th and 29th January 2016
7. **Dr. B. Chitradevi. 2016**, Two day’s workshop on ”Water quality Analysis “ jointly organized by the Department of Botany and Environmental Science under DBT-STAR College Scheme at PSG CAS on 28th and 29th January 2016
8. **Uma.E., 2016**, Two day’s workshop on ”Water quality Analysis “ jointly organized by the Department of Botany and Environmental Science under DBT-STAR College Scheme at PSG CAS on 28th and 29th January 2016

9. **Dr. K. S. Tamilselvi. 2016**, One day work shop on “Fine Tuning of Research Paper Writing and Citation Analysis” organized by the Department of Library, PSG College of Arts and Science, Coimbatore on 9th February 2016.
10. **Dr. K. Gajalakshmi. 2016**, 9th symposium on Modern Biological Sciences, Dept. of Biosciences & Research, SNMV & IICPT, Tanjavur on 11 & 12th February 2016.
11. **Uma, E. 2016**, Two days work shop on “Statistical tool for Biologists” organized by the Department of Biotechnology, PSG College of technology, Coimbatore. 26 – 27th February 2016.

iv. **Guest Lectures (Please mention Name, Designation, Host Institute of the Guest Faculty)**

- **Dr. K. Mani**, Associate Professor, Department of Plant Biology and Plant Biotechnology, PSG College of Arts and Science. Coimbatore. Tamilnadu. Topic: Life is inevitable. Date: 30.06.2015.
- **Dr. Quenny Pradhan Singh**, Associate Professor, University School of Law and Legal Studies, GGS Indraprastha University, Sector 16-C, Dwarka, New Delhi. Topic: Women Empowerment. Date: 08.07.2015.
- **Dr. S.P.M. Prince William**, Scientist SWMU, National Environmental Engineering Research Institute Nagpur, Maharashtra. Topic: Bioaugmentation and Biostimulation for Contaminated Soil Remediation. Date: 06.08.2015.
- **Dr. C. Sathish Kumar**, Scientist, Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI) Palode, Thiruvananthapuram, Kerala. Topic: Orchids of Western Ghats. Date: 14.08.2015.
- **Er.R. Ilangovan**, Superintending Engineer, Parambikulam Aliyar Basin Circle, Water Resources Department, PWD, Pollachi. Topic: Environment in Daily Life. Date: 19.8.2015
- **Sri, K. Prabhu Sankar**, Managing Director, Thanyas Organic Pvt Ltd, Coimbatore. Topic: Production of Toxin Free Vegetables using Aeroponics. Date: 07.10.2015.
- **Dr. P. Premasudha**, Assistant Professor, Department of Nanoscience and Technology, Bharathiar University, Coimbatore. Topic: Nanoscience for Biology students. Date: 17.12.2015
- **Mr. P. Vincent**, Secretary, District Herbal and Tree Growers Association, Coimbatore. Topic: Kitchen garden and Terrace garden and Nursery techniques. Date: 21.12.2015.

- **Dr. V. Chandrasekar**, Head, Department of Biotechnology, KSR College of Arts and Science, Tiruchengode. Topic: Recent advances in biotechnology. Date: 16.02.2016.

Activities for Non-teaching Staff:

Training attended by Non-teaching staff:

Laboratory staff attended hands on training in the operation of Fermenter and HPLC in the Department of Botany for 2 days.

6. Advisory committee meeting: ANNEXURE I

7. List of New Practicals/demonstrations introduced for UG students of each batch (I, II and III year) in different departments supported under Star College Scheme in last one year:

III B.Sc PBBT

Practicals: Plant Biotechnology and Environmental Biotechnology

- Estimation of halides in water samples by potentiometry.
- Estimation of Co^{2+} and Ni^{2+} by colorimetry/spectrophotometry.
- Estimation of sulphates by turbidometry.
- Detection of heavy metals in various samples.
- Sampling techniques: wastewater analysis for physico-chemical characteristics such as pH, conductivity, TDS, DO, BOD, COD, CO_2 , alkalinity, nutrients, chlorides, hardness, settlability of solids.
- Microbial degradation of textile dyes/pesticides/hydrocarbons and oils
- Assay of enzymes involved in biotransformation.
- Pollutant removal using microorganisms from industrial effluent.
- Effect of heavy metals on microbial growth and microbial leaching of metals
- Effect of pesticides on soil microorganism

Demonstration:

- Preparation of MS medium, Sterilization of explant and inoculation, culture maintenance
- Transgenic plants -Photographs/charts.

- Demonstration of preparation of synthetic seeds.
- Plasmid DNA isolation, Restriction and digestion using agarose gel electrophoresis

8. **Number of students taking project vs. total number of students. Please give list of projects department-wise during the support period.**

All III year UG students (57 vs 57)

- Influence of nickel on the growth and biochemical contents of *Trigonella foenum-graecum* L. and *Arachis hypogaea* L.
- Evaluation of plants symbolised in Tamil poem kurinji pattu.
- Nutritional analysis of millets and cereals used in our daily life.
- Determination of aspartame in soft drinks and its effects in plant growth.
- Isolation and identification of *Rhizobium* bacteria by using 16S rDNA primer.
- Detection of adulterants in food products.
- Estimation of protein and carbohydrate in different pulses.
- Microbial production of plant growth hormones (IAA & GA) and its effect on plants growth, Nutritional factors and DNA in green gram and fenugreek.
- Antimicrobial activity of in vitro regenerated plantlets of *Acmella calva* (DC.) R.K. Jansen (Asteraceae).
- Phytochemical screening and anti oxidant properties of some ayurvedic plants.
- Root morphology anatomy and mycotrophy of *Habenaria logicornu* L.

9. **Interdepartmental activities conducted Botany**

- Workshop on Kitchen garden, Terrace garden and Nursery techniques by **Mr. P. Vincent**, Secretary, Coimbatore District Herbal & Tree Growers' Association, Coimbatore **(Interdepartmental with Zoology)**.

10. **Qualitative improvements due to DBT support (please highlight 5 salient lines)**

- Organizing Guest lectures by the departments in various fields that enriched the students with the latest updates of the subject and gave them an insight regarding avenues for higher studies, placement etc.
- Industry oriented hands on training in tie-up with Industries/ Corporates like –Bioline, Seeds Enviro, Thanyas Organic Pvt. Ltd etc.
- Industrial visits undertaken by the II & III year students helped them gain knowledge on the latest technical updates in the industries.

- Workshop on Water quality Analysis in collaboration with PSG College of Arts & Science, Kitchen garden, Terrace garden and Nursery techniques (Inter-departmental with Zoology) enabled the students to understand the nuances of entrepreneurship.
- Group projects motivated the students to take up research.

11. Strengths and weaknesses of each department (3 each)

Strength:

1. Students strength
2. Qualified faculty
3. Well equipped lab for practicals and projects

Weakness - Nil

12. Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines): Nil

13. DBT grant utilization:

Recurring: Sanctioned Amount Rs 2, 00,000/-

S.No	Item	Amount (INR)
1	Students Activities: Group Projects	23,120
2	Workshop	8,300
3	Institutional Visit	40,700
4	Training programme	6,155
5	Guest lectures	2000
5	Chemicals and consumables	1,19,973
Total		2,00,248

Feedback

1. Faculty:

The enhancement in inter departmental/Interdisciplinary activities among the departments has enabled the faculty to perfect their research skills. This scheme has empowered the faculty to motivate the students to take up higher studies.

2. Students:

The DBT Star College Scheme has improved the laboratory infrastructure due to which individual experiments and funded group projects were possible.

Opportunity to attend various Seminars, Conferences and workshops was due to the support of DBT-Star College Scheme. The students were able to interact with their peers in other institutions.

The institution/industrial visits organized under the Star College Scheme has provided various placement opportunities.

Future plan:

To train the students with required skill for R&D in life sciences in association with industries thereby providing carrier opportunities.

DEPARTMENT OF ZOOLOGY

A. Students Activities

i. Summer School

- Aavin Dairy Unit, Salem - The students acquired knowledge on animal feeding, animal health, feed and fodder, processing of milk and the application of biotechnology in the dairy industry. **(5 students)**
- Pasteur Institute of India, Coonoor - The students acquired knowledge on types of vaccines, production of vaccine through biotechnological processes. **(5)**
- Clinical Labs attached with various hospitals - The students got exposed to different clinical laboratory techniques. **(31 students)**
- Vamsam Fertility Research Centre, Coimbatore-The students acquired knowledge on different fertility treatment facilities for Infertility, IVF, PGD treatment in Chennai, Surrogacy treatment (surrogate mothers), Delivery, Surrogacy, IVF, ICSI, IUI, Egg Donation, Embryo Donation, Freezing Embryo Transfers, PGD, Pre-implantation genetic diagnosis, screening, Endometrial receptivity array through technological processes. **(6 students)**
- Karunya University, Coimbatore- The students gained knowledge through hands-on training on the applications of different tools in biotechnology. **(6 students)**
- NBA Goat Farm, Theni- The students acquired knowledge on animal feeding, animal health, feed and fodder, processing of milk and the application of biotechnology in the farm industry. **(1 student)**
- Indian Academy of Sciences, Bengaluru- The student gained knowledge on tremendous biological diversity, India's habitats and wildlife that are threatened and exploitation of natural resources, which have created an urgent need to scientifically manage India's wildlife and wild habitats. **(1 student)**

ii. Industrial Visit

S.No	Class	Place of Visit	Date	No. of Beneficiaries	Justification
1	III	Biozone	13.08.15	55	The opportunity to visit research lab,

	B.Sc. AZBT	Research Technologies, Chennai	to 14.08.15		stimulate the students to do further research in the field of biotechnology and applications of biotechnology in natural sciences and also promotes information seeking behavior among the students.
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iii. List of Projects

(5 Groups with each 10-11 students)

- Isolation, Identification and Antibiotic Resistance of Lactic Acid Bacteria in Milk Samples (**Interdepartmental –with Botany**)
- A Report on the Prevalence of Iron Deficiency Anaemia among Adolescent Girls in Coimbatore City (**Interdepartmental – with Chemistry, Botany, Mathematics, Physics**)
- A Study on the Life Cycle and Behavioural Aspects of the Fig Wasp, *Eupristina Verticillata* (Hymenoptera: Agonidae) In Relation To Pollination of Fig Tree, *Ficus Microcarpa* (**Interdepartmental –with Botany**)
- Effect of Accumulation of Heavy Metals in the Biochemical Profile of Tuticorin Marine Fishes (**Interdepartmental – with Chemistry**).
- Studies on the Life History and Pit Construction Strategies of Antlion Larva (Neuroptera: Myrmelenotidae) to Different Soil Particle Substrates (**Interdepartmental – with Chemistry**).

B. Teacher's Activities

i. Seminars Attended

- **Dr. P.B. Harathi** attended a “CME National Seminar on Advances in Basic & Clinical Immunology” organized by **Department of Zoology in Collaboration with National Institute of Immunology, Bharathiar University, Coimbatore** from 15th – 16th Sepetember, 2015.
- **Dr. R. Radha** attended a “CME National Seminar on Advances in Basic & Clinical Immunology” organized by **Department of Zoology in Collaboration**

with National Institute of Immunology, Bharathiar University, Coimbatore from 15th – 16th September, 2015.

- **Mrs. P. Susheela** attended NAAC sponsored one day state level seminar on “**Innovative practices in teaching-learning process**” and presented a paper on “**Humour - An effective approach to reach the hearts and minds of students**” at Nanda Arts and Science College, Erode on 12.09.2015.
- **Mrs. P. Susheela** attended IQAC sponsored one day national level conference on “**Higher Education in Knowledge Age: Techno-Pedagogical Perspectives and Innovations**” at St. Joseph’s College, Trichy on 24.02.2016-25.02.2016.

ii. Seminars, Workshop Organized

- A workshop was organized on 11.09.2015 for 250 students from different disciplines on “**Estimation of Haemoglobin and Detection of Blood Group**”.

Outcome of the workshop: An awareness programme was carried out for 250 students from different disciplines and the health related parameters like BMI Index, detection of blood group, estimation of haemoglobin were analyzed.

Training courses attended:

- **Dr. P.B. Harathi** participated in a one day workshop – **DNA Barcoding** organized by **Biozone Research Technologies, Chennai** from 13.08.2015 to 14.08.2015.
- **Dr G. Sasikala** participated in a one day workshop – **DNA Barcoding** organized by **Biozone Research Technologies, Chennai** from 13.08.2015 to 14.08.2015.
- **Dr. P.B. Harathi** participated in a one day workshop -**Statistical Tools for Biologists** organized by **Department of Biotechnology, PSG College of Technology, Coimbatore** from 26.02.2016 – 27.02.2016.
- **Dr. P.B. Harathi** participated in a three day workshop - **Research Based Pedagogical Tool for Teachers of Undergraduate Colleges** organized by **Indian Institute of Science Education and Research (IISER), Pune** held from March 10-12, 2016.
- **Mrs. Susheela .P**, attended Summer Internship (2 months) sponsored by Indian Academy of Science at **Central University of Kerala, Kasaragod, Kerala**.

Activities for Non-teaching Staff:

Training attended by Non-teaching staff:

Laboratory staff attended hands on training in the operation of Blood Analyser and UV-Visible Spectrophotometer on 28.03.2016

iv. Guest Lectures: (Please mention Name, Designation, Host Institute of the Guest Faculty)

1. **Dr. Mani, Professor, Dept. of Botany, PSG CAS, Coimbatore** delivered a lecture on **“Life is inevitable”** (25.06.2015) - **Interdisciplinary**
2. **Mr. Bhoopathi Rajan, IT Consultant & Acupuncturist**, delivered a lecture on **“Health and Well-Being”** (02.07.2015) - **Interdisciplinary**
3. **Dr. N.D. Shrinithiviahshini, Assistant Professor, Department of Environmental Management, Bharathidasan University, Trichy**, delivered a lecture on **“Xenoestrogens”** (29.07.2015)
4. **Dr. D. Silambuchelvi, Founder, Vamsam Fertility Research Centre, Coimbatore** delivered a lecture on **“IVF- An Overview”** (06.08.2015)
5. **Dr. V.S. NagaBhushan (Consultant Biochemist), HOD, Department of Biochemistry, Micro Labs, R.S.Puram, Coimbatore** delivered a lecture on **“Introduction to Clinical Biochemistry”** (26.08.2015)
6. **Mr. Syed Samiullah, Head Operations, Professional Info Tech Placement & Training, Coimbatore** delivered a lecture on **“Medical Coding & Clinical Trials”** (01.10.2015) - **Interdisciplinary**
8. **Mr. K. Prabhu Sankar, Managing Director, Thanyas Organic Pvt Ltd** delivered a lecture on **“Toxin free vegetable cultivation under controlled environment Aeroponics”** (06.10.2015) - **Interdisciplinary**
9. **Dr.M.S.A.Muthukumar Nadar, Assistant Professor, School of Biotechnology & Health Sciences, Karunya University, Coimbatore**, delivered a lecture on **“An Introduction to Immunology”** (21.01.2016)
10. **Mr. Sadiq Ali, Founder, The Wildlife and Nature Conservation Trust (WNCT), Ooty** delivered a lecture on **“Wildlife Conservation”** (10.02.2016) – **Interdisciplinary**

11. **Dr. V.Chandra Sekar, Associate Professor and Head, Dept of Biotechnology, KSR College, Thiruchengode** delivered a lecture on **“Recent Advances in Biotechnology”** (17.02.2016) - **Interdisciplinary**

Lab manuals, SOPs prepared:

- Lab manuals for III B.Sc. Zoology.
- SOPs for a)Detection of Blood Grouping b) Estimation of Hemoglobin
- E – Resources developed.

6. Advisory committee meeting: ANNEXURE I

- 7. List of New Practicals/demonstrations introduced for UG students of each batch (I, II and III year) in different departments supported under Star College Scheme in last one year:**

I Year - (Core Practicals I)

Field observations combined with photography and/or videography

- 1) Study of live water specimens in nearby water bodies
- 2) Study of insect fauna.

Culture Methods

- 1) Culture of unicellular organisms (Amoeba, Paramecium, and Euglena)
- 2) Culture of multicellular organisms (Earthworm)

III Year - (Core Practicals III)

1. Isolation and estimation of DNA & RNA.
2. Blotting techniques- observation and photographs.
3. Techniques of sterilization dry and wet.
4. Preparation of nutrient agar& broth media.

5. Distribution of microbes in soil, air and water.

8. Number of students taking project vs. total number of students. Please give list of projects department-wise during the support period.

55 Vs 55

- Phytocapping of Solid Wastes at PSGR Krishnammal College Campus.
- Isolation, Identification and Antibiotic Resistance of Lactic Acid Bacteria in Milk Samples.
- A Report on the Prevalence of Iron Deficiency Anaemia among Adolescent Girls in Coimbatore City - Interdisciplinary.
- A Study on the Life Cycle and Behavioural Aspects of the Fig Wasp, *Eupristina Verticillata* (Hymenoptera: Agonidae) In Relation To Pollination of Fig Tree, *Ficus Microcarpa*.
- Effect of Accumulation of Heavy Metals in the Biochemical Profile of Tuticorin Marine Fishes.
- Studies on the Life History and Pit Construction Strategies of Antlion Larva (Neuroptera: Myrmelenotidae) to Different Soil Particle Substrates.

9. Interdepartmental activities conducted:

- Group projects were carried out in collaboration with departments of **Botany and Chemistry**.

10. Qualitative improvements due to DBT support

- A workshop on “Estimation of Haemoglobin and Detection of Blood Group” was carried out among the student community to understand the possible factors for the cause of anemia. The workshop helped the students to gain knowledge on the topics related to prevalence of anemia among adolescent girls, importance of iron intake and consequences of anemia at the reproductive age.
- Summer Internships were carried out effectively by the students for a period of 15 days in diverse areas such as Clinical lab Techniques, Dairy farm, Rice Industry, Biotechnology and Fertility Centers in reputed institutions and organizations.
- Group projects were carried out by the students where the main focus is given to basic science research emphasizing concept to application.
- Industrial visit to Biozone Research Technologies enhanced the students to undertake hands-on training programme on “Bar Coding” that helped the students to gain

knowledge in DNA isolation and also in handling various molecular biological instruments and tools like PCR, HPLC, Gel Electrophoresis etc., and their application and also the visit to Prawn culture farm helped the students to gain knowledge about Techniques in Genetic Engineering and prawn culture.

- Resource persons were invited to deliver special lectures which facilitated the students to broaden their horizons in various fields. The lectures also enriched our students with the latest updates of the Industries and Technicalities. The Students are bestowed with knowledge about Industry needs, latest technical updates, Avenues for Higher studies, and placement.
- Fund supported by DBT helped to organize inter-departmental training programmes and workshop for the students and faculty.
- Students were able to perform the practicals individually which were conducted in groups so far.
- One of our final year student cleared – IIT JAM
- Two of our final year B.Sc Advanced Zoology and Biotechnology students from the Department of Zoology, Aboorvalakshmi.S and Subhashini.K have been selected for a non-graduating non-exchange student program for semester –Two course work from January 11th to May 7th 2016 at National University of Singapore (NUS), Singapore.
- Institutional visits to different Institutes proved to be beneficial for the students. It has given them an insight to look beyond the curriculum and kindled curiosity and interest to pursue their higher studies in the field of biological sciences.
- Subhashini K, III BSC Advanced Zoology and Biotechnology underwent Summer Internship (2 months) at Indian Academy of Sciences, Bangalore.
- Students and faculty members attended seminars/workshops on
 - Bio-Instrumentation to gain Hands on Training in handling laboratory instruments
 - Seminar on Advances in Basic & Clinical Immunology to gain knowledge in the field of Immunology and Vaccination.
 - Emerging Trends on Biosciences that focused on the emerging trends and methods in the field of biosciences so that students and scholars can strive hard in discovering new areas in research.

- **K.Keerthana, S.Swathi, T.P.Gomathi, T.Mohana Priya, N.Sowndhariya, Gayathri S** has attended a workshop on **“Bio-Instrumentation”** at **Karpagam Arts & Science College, Echanari** on 26th August, 2015.
- **Subhashini.K, Syed Um Kulth.S, Aishwarya.G., Nandhini.M,** has attended a **“CME National Seminar on Advances in Basic & Clinical Immunology”** organized by **Department of Zoology in Colloboration with National Institute of Immunology, Bharathiar University, Coimbatore** from 15th – 16th Sepetember, 2015.
- **Nandhini.M, Syed Um Kulth.S., Swathi Priya, Dharanipriya, Snegha, Aboorvalakshmi, S.** has attended a **One Day National Seminar on Emerging Trends on Biosciences** organised by **PG & Research Department of Zoology, Kongunadu Arts & Science College, Coimbatore.**
- **Meenatshi K** of III B.Sc., Advanced Zoology & Biotechnology attended and presented a paper entitled **“A Study on the Life Cycle and Behavioral Aspects of the Fig Wasp, *Eupristina Verticillata* (Hymenoptera: Agonidae) In Relation To Pollination of Fig Tree, *Ficus Microcarpa.*”** a National level conference entitled **“Insect Diversity Studies: Where does India stand in the Global map? Jointly organised by Department of Animal Science, Central University of Kerala and Entomological Society of India and Prof. T.C. Narendran Trust for Animal Taxonomy** on 29th – 31st March, 2016.
- **Sowndhariya Gayathri N and Swathi S** of III B.Sc., Advanced Zoology & Biotechnology attended and presented a paper entitled **“Studies on the Life History and Pit Construction Strategies of Antlion Larva (Neuroptera: Myrmelenotidae) to Different Soil Particle Substrates”** a National level conference entitled **“Insect Diversity Studies: Where does India stand in the Global map? Jointly organised by Department of Animal Science, Central University of Kerala and Entomological Society of India and Prof. T.C. Narendran Trust for Animal Taxonomy** on 29th – 31st March, 2016.

11. Strengths and weaknesses

Strength –

- All the five faculty members are indulged in research.
- Two Major projects completed and one major project ongoing. Two patent and copyrights are registered.
- The financial support received has improved the infrastructure and the quality of the department.
- Both the students and faculty have gained from the enrichment programmes organized regularly.

Weakness:

Nil

12. Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines) - NIL

13. DBT grant utilization:

Recurring: Sanctioned Amount Rs 2, 00,000/-

S. No	Details	Amount in Rupees
1	Students Activities i) Training Programme ii) Industrial Visit iii) Group Project iv) Workshop	 30,000 25,000 19,293 5,647
2	Teachers Activities ii) Guest Lecture	 1,000
3	Chemicals & Consumables	1,20,000
Total		2,00,940

Feed Back

DBT STAR Scheme provided the students with a keener insight into and a deeper appreciation of many facets of science. From this base, our graduates will be able to pursue future specialization with confidence. The internships undertaken by our

students related to various fields of biology facilitated the networking opportunities in work environments that might be relevant to future employment settings. The workshop organised helped the students to gain knowledge on the topics related to prevalence of anaemia among adolescent girls, importance of iron intake and consequences of anemia at the reproductive age. Group projects were carried out by the students where the main focus was given to basic science research, interdisciplinary approach and also emphasizing concept to application. Students were able to carry out the experiments individually and gained confidence to handle and maintain the instruments with the support extended by DBT – STAR Scheme. Resource persons invited to deliver special lectures facilitated the students to broaden their horizons in various fields. The lectures also enriched our students with the latest updates of the Industries and Technicalities.

Future Plans

- Purchase of Digital Dissection software (Group User) for I B.Sc., Zoology & Allied Zoology students as an alternative to replace the live animal dissections (the software to be purchased from Schnell Informatics Pvt Ltd).
- To set up a pond ecosystem inside the campus as a part of experimentation relating to the biotic and abiotic components of the pond community. Students will perform simple experiments to see how water, temperature, light and minerals affect the biotic community that exist within the pond.
- Up gradation of laboratory - The labs can be equipped with audio visual supporting system to enhance the teaching learning pedagogy and improve student comprehension
- To create awareness among the students regarding the job opportunities as wildlife biologists with the Bachelor's Degree in Zoology

DEPARTMENT OF MATHEMATICS

5. Activities carried out during the year (department wise):

A) Student activities:

i. Summer school:

Summer Training for II B.Sc Students

S. No	Internship done	No.of. Beneficiaries	Justification
1	Training in Tally (08.05.15 to 23.05.15) Training at Software Information Technology (1.4.15 to 1.6.15) Training at creative school of Multimedia (04.5.15 to 10.06.15)	60	Hands on Training in these areas will expose the students for self employment

Entrepreneurship Awareness Camp:

Five students from II B.Sc. Mathematics attended a three day **Entrepreneurship Awareness Camp** from 25.02.2016 to 27.02.2016 at PSG Arts and Science College, Coimbatore.

Internship

- **Varshini. J. B** attended **MATHEMATICAL TRAINING AND TALENT SEARCH (MTTS) Level – 0. Date: 11.05.15- 06.06.15 at Goa University, Panjim, GOA.**
- **Varshini J.B** attended **Winter School Ca**
- **mp** on Dec 14-27, 2015. **Venue: Central University of Tamil Nadu, Thiruvavur.**

ii. Industrial Visit:

An Industrial Training on **“Queuing systems”** was organized from 14.08.2015 to 16.08.2015 at Sea Blue Shipyard, Cochin. 45 students from the Department of Mathematics benefited through this Programme.

iii. List of Projects Undertaken by Students

- Voronoi Diagram and its applications (**Interdepartmental with Physics & Chemistry**)
- Mathematical Modeling and its Applications in Biology (**Interdepartmental with Botany and Zoology**)
- Mathematical Billiards
- Applications of Mathematics in Cricket
- Fractals (**Interdepartmental with Chemistry**) Mathematician Contrivance
- Ordinary Differential Equation and their Applications (**Interdepartmental with Physics & Chemistry**)
- Partial Differential Equation and their Applications (**Interdepartmental with Physics & Chemistry**)
- Applications of Linear Algebra
- Graph Theory and its Applications
- Application of Fibonacci Series and Golden Ratio (**Interdepartmental with Botany, Zoology , Physics & Chemistry**)
- Knot Theory

B) Teachers' activities:

i. Workshops, Seminars /Attended:

S.No	Date	Name of faculty	Topic	Venue
1	29.01.16	Dr. K. Sumathi	National Seminar on “Empowering the Youth to Enrich Mankind”	NGM College, Pollachi, Coimbatore.
2	24.03.16 to 26.03.16	Dr. G. Arthi	International Conference on “ Nonlinear Dynamical Systems”	Bharathiar University, Coimbatore.

ii. Training Courses Conducted / Attended

One day Workshop on **“Preparation for Competitive Examination”** in Mathematical Sciences. 60 students of Department of Mathematics attended this programme on 15.09.2015. The resource person was Dr. K. Karupiah, Program Associate , Department of Mathematics, Bharathiyar university, Coimbatore & Dr. G. Nagamani, Assistant Professor, Department of Mathematics, Gandhigram Rural Institute- Deemed University, Gandhigram, Dindigul.

iii. Guest Lectures: (Please mention Name, Designation, Host Institute of the Guest Faculty)

1. **Dr. G. Sai Sundara Krishnan, Associate Professor, Department of Applied Mathematics and Computational Sciences, PSG College of Technology, Coimbatore** delivered a lecture on “**Mathematical Modelling**” on 12.07.2015. No of Beneficiaries: 180 students. **(Interdepartmental with Botany, Zoology, Physics & Chemistry).**
2. **Mr. M. Muthuchelvam, Associate Professor, Department of Mathematics, KPR Institute of Technology, Arasur** delivered a lecture on “**Introduction to Graph Theory**” on 31.07.2015. No of Beneficiaries : 60 students.
3. **Dr. P. Raja Rajeshwari, Assistant Professor, Department of Mathematics, Chikkanna Government College, Tirupur** delivered a lecture on “**Applications of Mathematics**” on 22.08.2015. No of Beneficiaries : 180 students. **(Interdepartmental with Botany, Physics & Chemistry).** The application of Fibonacci numbers in Flowers like Hibiscus, white vinca etc was discussed.
4. **Dr. M. Mallika Arjunan, Assistant Professor, Department of Mathematics, C.B.M. College, Kovaipudur, Coimbatore** delivered a lecture on “**Motivational speech on Research**” on 30.09.2015. No of Beneficiaries : 180 students. **(Interdepartmental with Physics & Chemistry).**
5. **Dr. Esther Clara, Assistant Professor, Department of Mathematics, Bishop Heber College, Thiruchirapalli** delivered a lecture on “**Tessellations**” on 07.01.2016. No. of Beneficiaries : 180 students. **(Interdepartmental with Physics & Chemistry).**
6. **Dr.K.P. Uma, Associate Professor, Department of Mathematics, Hindustan College of Engineering & Technology** delivered a lecture on “**Applications of Stochastic Processes in Man Power Modelling**” on 01.02.2016. No. of Beneficiaries : 180 students. **(Interdepartmental with Physics & Chemistry).**
7. **Mrs.A.R.Kiruthika, Assistant Professor, Department of Mathematics, Shri Andal Alagar College of Engineering, Mamandur, Chengalpet** delivered a lecture on “**Fractional Calculus**” on 26.02.2016. No. Of Beneficiaries: 60 students. **(Interdepartmental with Botany, Zoology, Physics & Chemistry).**
8. **Dr.A.Sahaya Sudha Assistant Professor, Department of Mathematics, Nirmala College of Women , Coimbatore** delivered a lecture on “**Application of Mathematics**” on 09.03.2016. No. Of Beneficiaries: 180 students. **(Interdepartmental with Botany, Zoology, Physics & Chemistry).**

6. Advisory Committee Meeting: ANNEXURE I

7. List of New Practicals / Demonstrations introduced for UG Students for each class (I, II and III year) in Different Departments supported under Star College Scheme in last one year:

Paper on Mathematical Modelling was introduced.

Real life problems in Operation Research using TORA Software.

8. Number of Students taking Project vs. Total Number of Students. Please give list of projects (department-wise) during the support period.

- Voronoi Diagram and its applications (**Interdepartmental with Physics & Chemistry**)
- Mathematical Modeling and its Applications in Biology (**Interdepartmental with Botany and Zoology**)
- Mathematical Billards
- Applications of Mathematics in Cricket
- Fractals (**Interdepartmental with Chemistry**)
- Mathematician Contrivance
- Ordinary Differential Equation and their Applications (**Interdepartmental with Physics & Chemistry**)
- Partial Differential Equation and their Applications (**Interdepartmental with Physics & Chemistry**)
- Applications of Linear Algebra
- Graph Theory and its Applications
- Application of Fibonacci Series and Golden Ratio (**Interdepartmental with Botany, Zoology , Physics & Chemistry**)
- Knot Theory

9. Inter-departmental Activities Conducted:

One day Workshop on Mathematical Modelling:

60 UG students from Department of Mathematics, Zoology, Chemistry, Physics and Botany attended one day Workshop on “Mathematical Models in solving Operation research problems using TORA software” on 29.02.16. The resource person was Dr. R. Vasanthi Assistant Professor (Mathematics), Department of Social Sciences, Agricultural College and Research Institute, Killikulam, Vallanadu.

10. Qualitative Improvements due to DBT Support (please highlight 5 salient points)

- The students were able to acquire the knowledge of creating a Mathematical Modelling on ship Building systems, meant to make ship designing systems.
- The student 's ability to analyze a given problem, identify an appropriate problem solving methodology, implement the methodology and propose a meaningful solution.
- A guest lecturing program improves students applied learning. Enhance students learning experience by providing current and relevant examples of the practical applications of theory they are learning in a particular subject.
- Internships are classified as experiential learning and are an ideal method to help students learn how to apply theories and concepts.
- Students acquired the knowledge from the workshop conducted and were able to compete in the examinations and got placed in various Institutions.

11. Strengths and Weaknesses of each Department (3 each)

Strengths:

- Stimulate students intellectually, leading them to apply Mathematics to a range of problems in a variety of contexts.
- Engage students with the mathematics content; create an environment conducive to learning Use questioning to monitor and promote understanding.
- Effective lessons provide multiple pathways that are likely to facilitate learning and include opportunities for the students in using real-world examples to vividly illustrate the concept.

Weakness: Nil

12. Problems Faced, if any, in implementation of the Program and Utilization of DBT Grant (in two-three lines): NIL

13. DBT Grant Utilization:

Recurring: Sanctioned Amount Rs 2, 00,000/-

S.NO	Details	Amount in Rs.
1.	Students Activities	
	(i)Training Program	11,000
	(ii)Industrial Visit	33,750

	(iii)Students Project	7,000
2.	Guest Lectures	13,250
3.	Interdepartmental Workshop	9,000
4.	Mentoring and Monitoring	6,000
5.	Consumables	1,22,535
	TOTAL	2,02,535

Students' Feedback:

- Students participate in various competitions held in other institutions and won prizes, thus getting encouragement, self-motivation and self-confidence.
- Mathematical laboratories help students solve mathematical problems using computer language C.
- Industrial Visit on Statistical Quality Control enabled students not only to enrich their knowledge but also provide them an opportunity to come across diversified areas and understand about people with different cultures, traditions and languages.

Faculty Feedback:

- There are always opportunities for improvement, new teaching techniques to learn and master, and experiences to share with colleagues.
- Faculty who participated in more comprehensive training programs become more learner-focused and their students were more likely to take deep approaches to learning.
- To lessen the learning curve and to provide students with standardized resources and materials.

Future Plans:

- To create Mathematical Modelling for real life time problems – interdisciplinary
- Hands on training – GEOGEBRA

Signature of the Co-ordinator

Signature of the Principal